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A Psycho-linguistic Study on Adult Playfulness: Its Hierarchical Structure and Theoretical Considerations

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Abstract By means of a linguistic corpus analysis, statements were derived that reflect trait-like characteristics of playful adults. These were given to a sample of 240 adults who also completed two measures of adult playfulness. Using Goldberg's (J Res Pers 40:347–358, 2006) top-down approach, the hierarchical factor structure of playfulness in this data set was examined. A solution with seven factors fits the data well and could be clearly interpreted. The retrieved factors were (1) cheerful-engaged; (2) whimsical; (3) impulsive; (4) intellectual-charming; (5) imaginative; (6) lighthearted; and (7) kind-loving. The two playfulness measures did not cover all of these dimensions. The intellectual-charming and the kind-loving variants of playfulness were less well represented in these instruments. The study contributes to the basic question of what factors underlie playfulness and suggests that there are aspects of adult playfulness that were hitherto less well described.

Keywords Adult playfulness · Corpus analysis · Hierarchical factor structure · Humor · Playfulness

Introduction

Adult playfulness is a neglected field in the research in personality and developmental perspectives. Most research efforts in this field focus on playfulness in children (see e.g., Barnett 1990, 1991; Barnett and Kleiber 1982; Pronin Fromberg and Bergen 2006; Lieberman 1977). There is no general agreement in literature on how to define adult playfulness as a personality characteristic. In a study with young adults, Barnett (2007) suggested the definition "the predisposition to frame (or reframe) a situation in such a way as to provide oneself (and possibly others) with amusement, humor, and/or entertainment" (p. 7). Playful behavior should manifest itself in joking, teasing, clowning, or acting silly and characteristics of playful adults are to be funny, spontaneous, impulsive, active, sociable, or cheerful.

Studying adult playfulness seems to be fruitful as there are theoretical and empirical accounts describing its relation to positive outcome variables such as intrinsic motivation (Amabile et al. 1994; Proyer 2011b), instrumental and expressive traits (Bozionelos and Bozionelos 1999), quality of life (Proyer et al. 2010), creativity and spontaneity (Barnett 2007; Glynn and Webster 1992), positive attitudes toward the workplace and job satisfaction (Yu et al. 2007), virtuousness (Proyer and Ruch 2011), stress coping (Bowman 1987; Qian and Yarnal 2011), or academic achievement (Proyer 2011a). Furthermore, Fredrickson (1998) argues that to play and to be playful can facilitate the experience of joy ("[…] over time and as a product of recurrent play joy can have the incidental effect of building an individual's physical, intellectual, and social skills", p. 305). This, in turn, may broaden a persons' action-thought-repertoire and may relate to the development of new coping resources.

Studies with adult populations may demonstrate interesting developmental trends across adulthood. For example, McGhee (2010a) argues that playfulness is inherited but that individuals become more serious with increasing age, which impairs their sense of humor. Findings from a

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recent study by Ruch et al. (2010), who surveyed humor/playfulness[1] in a large sample of participants ($N = 42{,}964$), suggest such a trend.

McGhee authored a training program for the increase in one's sense of humor by developing (or rediscovering in his terms) a playful frame of mind as one of its core components (McGhee 2010b; cf. Proyer et al. 2010). He sees playfulness as both, a skill and a habit. Those with a playful frame of mind are in control of when to be playful and when not to be. Initial studies show that interventions derived from this line of research were truly effective in enhancing the participant's well-being (Crawford and Caltabiano 2011; see Ruch et al. (2011) for an overview).

As already mentioned, there is no agreement on a consensual definition or theory of adult playfulness. As a consequence, there is no consensus on its basic structure and underlying dimensions. Some of the current conceptualizations and theories refer to a one-dimensional personality characteristic, while others argue for a multifacetted model. For example, there is the idea of playfulness as a paratelic state in the theory of psychological reversals (Apter 1982) or the need to play as one of the basic needs described by Murray (1938).

Lieberman (1977) is among those, who favored a multidimensional operationalization. She argues that three broader dimensions constitute playfulness; namely (1) *manifest joy*; (2) *spontaneity* (physical, social, and cognitive); and (3) *sense of humor*. Schaefer and Greenberg (1997) developed a *Playfulness Scale for Adults* for which they computed a total score as an indicator of the fun aspects of play. However, they also reported a factor analysis in which they identified five factors; i.e. (1) *fun-loving*; (2) *sense of humor*; (3) *enjoys silliness*; (4) *informal*; and (5) *whimsical*. Barnett (2007) collected descriptions of playful and nonplayful people for identifying its core components. By analyzing self-ratings and other ratings of these components, she found four broader categories; namely (1) *gregarious*; (2) *uninhibited*; (3) *comedic*; and (4) *dynamic*. Thus, despite of many contributions to the field, the question of the dimensionality is still discussed controversially.

The present study aims at contributing to the debate by employing a psycho-linguistic approach by combining a linguistic corpus analysis with an empirical study. The *COSMAS II* (Corpus Search, Management and Analysis System; Al-Wadi 1994), of the *Institute of German Language* retrieves concordance information (the text surrounding specific key words in all its morphological variants) on specific words in written texts. It comprises complete issues of newspapers, magazines, and releases from press agencies, literary works, scientific works, official documents, historic writings, speeches by politicians, and other written sources. In this study, the entries reflect implicit linguistic and psychological theories on adult playfulness as found in the German language.

Conducting such an analysis for "playful(ness)" and its most common inflectional terms[2] revealed 15,054 hits. It has to be noted that the German word (or words) for "playful(ness)" ("verspielt[heit]" or "spielerisch") can have several meanings—e.g., a person can be *verspielt* but a team (e.g., football) can also loose a win in a game (i.e., "Den Sieg *verspielen*"), a single player can loose the ball in a game (i.e., "Den Ball *verspielen*"; "Der Spieler war zu *verspielt* und verlor den Ball"), or people can become bankrupt due to gambling in a Casino (i.e., "Haus und Hof *verspielen*"). Therefore, the hits from the corpus analysis did not only contain items relating to playfulness as a characteristic of a person but also entries of broader meanings. All entries had to be checked and evaluated. Items were deleted when they did not cover the intended meaning or when they were not suitable for the creation of items (see below). A rather broad category of entries in the initial list dealt with the description of animals (e.g., a playful kitten, "Ein *verspieltes* Kätzchen") and these entries, of course, also had to be filtered and subsequently excluded from further use.

Students (eighteen in total that worked in smaller groups of two to four) attending a course on psychometrics screened all entries. They searched the list for contents that could be used for the formulation of items to describe playfulness in adults. The large number of hits was split into smaller parcels that several groups of students worked on simultaneously. In doing so, it was ensured that several independently working groups covered all entries and that decisions were not based on single persons or a single group. The students were introduced to the basics of research in playfulness in adults and the idea behind corpus analyses; they already had knowledge about personality psychology and lexical approaches. Additionally, the students received training in how to write items for psychological questionnaires and techniques of data analysis.

Several criteria for the selection of *contents* in the corpus that could be phrased into items were developed by the head of the project and discussed with the students. They received examples for contents fitting the criteria and for items not fitting to the criteria. These examples were

[1] In Peterson and Seligman's (2004) classification of character strengths and virtues, humor is one of the strengths (assigned to the virtue of transcendence). The authors use playfulness synonymously with humor (see Proyer and Ruch 2011).

[2] The settings for the COSMAS II analysis were the same as in Proyer et al. (2009); i.e., "archive: W–Archiv der geschriebenen Sprache" (archive of written language); "corpus: öffentlich–alle öffentlichen Korpora geschriebener Sprache" (all public corpora in written language)."

discussed along with any arising questions. The criteria were: (a) the entry reflects a trait-like personality characteristic; (b) the entry is not too specific (i.e., not bound to a single incident but to situations that could be part of the daily life of people); (c) additionally, the whole working group had to agree that the content could be related to adult playfulness; (d) the content should not overlap with another entry; and (d), as a final criterion, the content should be equally suitable for males sand females. The head of the project was present during the whole procedure so that students could ask questions in case of uncertainty. Student groups working on the same parcels met after finishing their screening and agreed upon a final selection in a committee approach with the head of the project. The whole procedure lasted about 3 months. It led to a final list of 112 statements (*Playfulness Incidents in Adults*, PIA; see the "Instruments" section for item samples).

A first comparison of the PIA statements and items of questionnaires for playfulness (at a purely descriptive level) revealed contents that are typically not covered or at least less pronounced by these questionnaires. For example, the PIA contains *negative aspects* of playful behavior; i.e., incidents where playfulness was related to aggressive or demanding behavior but also to the enjoyment to challenge other people (e.g., by witty remarks). Thus, in the written sources, there was a "dark side" of playfulness. Furthermore, several entries in the PIA refer to specific behaviors toward the preferred gender (e.g., being a romantic person or making lascivious comments). However, it also needs to be acknowledged that many of the entries in the PIA converged well with what has been reported before; e.g., Lieberman's (1977) or Barnett's (2007) dimensions were well reflected in the item contents.

Aims of the Present Study

The main aim of this study is the identification of the dimensionality of adult playfulness based on descriptions derived from a linguistic corpus analysis. This should contribute to the basic understanding of how adult playfulness can be described in terms of implicit linguistic and psychological theories. Although a one-factorial solution might be possible, it is expected that playfulness will be better represented by a multifactorial solution. Its hierarchical structure will be analyzed using the top-down procedure suggested by Goldberg (2006).

The second main aim is a comparison of this solution with two current instruments for the assessment of adult playfulness. This allows for commenting on whether all contents identified in the corpus analysis are found in these measures. To the best knowledge of the author, none of the measures on adult playfulness claim to be comprehensive and to cover all of its facets and, therefore, it is expected that the comparisons yield similarities but also differences. The latter might be helpful in the identification of research areas in this field that should be considered more thoroughly and where more attention is needed in future studies.

Method

Sample

The sample consisted of 240 adults aged between 17 and 85 ($M = 34.29$, $SD = 15.38$). The male/female ratio was 1:1 with 119 males and 120 females (one person did not indicate his/her gender). About one-third (34.6%) was married. About half of the participants (51.7%) indicated that they were either studying at the moment or holding a degree from university and close to one-third (29.2%) had a completed vocational training as their highest educational level.

Instruments

The *Playfulness Incidents in Adults* (PIA) is a list of 112 indicators of playfulness in adults as derived from a corpus analysis in this study (e.g., "Some times, I behave childish", "I am creative", "I am inspired easily", or "I enjoy abstract pieces of art"; further item contents can be derived from Table 1). A short instruction was written and participants answered to the items in a 4-point scale from 1 = "strongly disagree" to 4 = "strongly agree".

The *Adult Playfulness Scale* (APS; Glynn and Webster 1992) is a list of 32 adjectives. Answers are given on a 7-point scale. A total score for overall playfulness was computed along with scores for five subscales; namely *spontaneous* (e.g., spontaneous vs. disciplined, impulsive vs. diligent), *expressive* (e.g., bouncy vs. staid, open vs. reserved), *fun* (e.g., bright vs. dull, excitable vs. serene), *creative* (e.g., imaginative vs. unimaginative, active vs. passive), and *silly* (e.g., childlike vs. mature, whimsical vs. practical). The scale yielded satisfactory reliability coefficients (between .73 and .83; Glynn and Webster). Glynn and Webster also report data on convergent and predictive validity, which has been supported in further studies (e.g., Amabile et al. 1994; Bozionelos and Bozionelos 1999; Fix and Schaefer 2005). The German version of the instrument was used, which had been tested in earlier studies and demonstrated satisfactory psychometric properties (see Proyer 2011a, b; Proyer and Ruch 2011); a total score as a general estimate of a person's playfulness was computed additionally to the facets. In this study, the alpha coefficients for the five scales were .75, .68, .64, .72, and .76; and .89 for the total score.

Table 1 Item contents with the highest loadings on the seven factors of adult playfulness as identified by a corpus analysis

Factor	Content
I: cheerful-engaged	Cheerful, positive mood, open, energetic
II: whimsical	Preference for odd and grotesque humor and comments, curiosity, lasciviousness
III: impulsive	Impulsive, vivacious, demanding, defiant
IV: intellectual-charming	Charming, intellectual, verbally fluent, sophisticated, creative
V: imaginative	Preference for artful things, easily inspirable, enjoying fantasy-related thoughts or contents
VI: lighthearted	Careless, not being ruminative, not being strict or exact, uncritical of things that happen around oneself
VII: kind-loving	Kind, loving, tender, romantic, benevolent

All items have loadings ≥.30 on their factor

Schaefer and Greenberg's (1997) 28-item *Playfulness Scale for Adults* (PSA) is a subjective measure of a person's predisposition to play. Answers are given on a seven-point Likert scale (1 = "strongly disagree" to 7 = "strongly agree"). Schaefer and Greenberg report high internal consistency (alpha = .90) for the PSA. While the scale has been used earlier in research and practice (e.g., Eisen and Schaefer 2005; Fix and Schaefer 2005), this is, to the knowledge of the author, the first use of the scale in a German-speaking country.

The items were translated in a translation-back translation procedure and further refined. The scale yielded high internal consistency (alpha = .86), and the median of the corrected item-total correlations was .43 and ranged from .11 to .67. A principal component analysis yielded a strong first factor explaining 22.8% of the variance; eight factors exceeded unity in this analysis (i.e., 6.15, 2.07, 1.70, 1.49, 1.43, 1.27, 1.14, and 1.02).

Procedure

Students in a course on psychometrics collected the data as part of the requirements of the course. Participants completed the questionnaires in paper–pencil form. Upon request, they received a feedback on the general results (sent to them in written form via Email). Participants were not paid for their services.

Results

A principal component analysis was conducted with the entire 112 items of the PIA. Factors of adult playfulness were extracted based on their eigenvalues (Scree test) and according to the interpretation of the solution. The Scree test did not provide a clear direction on how many factors were to be extracted. Twenty-six eigenvalues exceeded unity. The first ten eigenvalues were 17.29, 9.01, 5.19, 4.50, 3.91, 3.50, 3.22, 2.67, 2.39, and 2.13, respectively. In a parallel analysis (Horn 1965), factor matrices were derived based on random numbers equivalent to those used in this study. The comparison of the eigenvalues did not provide a clearer picture either, as the first ten random eigenvalues were ≥1.10.

It can be seen from the trend of eigenvalues that there was a very potent first factor that explained 15.44% of the variance. This could be interpreted as a general factor of playfulness and it was labeled accordingly (see Fig. 1). For a further analysis of the data, Goldberg's (2006) approach was used. Solutions with two to ten factors were extracted (in each case, a rotation to the Varimax criterion was conducted). The results indicated that solutions with more than seven factors were difficult to interpret. Starting from solutions with eight factors, factors emerged that yielded higher double or triple loadings. It seemed as if those solutions were highly artificial and did not blend in with what could be related to theoretical or conceptual accounts. Thus, those solutions were not considered any further.

The seven factors in the final solution explained 41.62% of the variance and could be well interpreted at the content level. Figure 1 shows the hierarchical structure of the variables from one factor (the general playfulness factor) to seven factors and displays the emergence of each of the factors; correlations among adjoining levels are also given (for those ≥.30; except for the step from 2/2 to 3/3).

Figure 1 shows that after the general factor was split into two broader factors, one factor emerged that was very robust throughout all the levels of the hierarchy. Highest loadings on this factor were found for items referring to feeling in a good mood, being humorous, being energetic, and lively. Table 1 gives an overview on item contents with the highest loadings on the respective factors. The first factor was tentatively labeled "cheerful-engaged" (*Factor I*). The second factor was split into two factors at the next lower hierarchy level—one with which it shared only about 6% of the variance and one with which it was highly identical. The latter one was stable from then on up to the final level of the factorial hierarchy. It covered items that reflected behaving unconventionally and open toward special forms of humor (e.g., macabre and grotesque jokes,

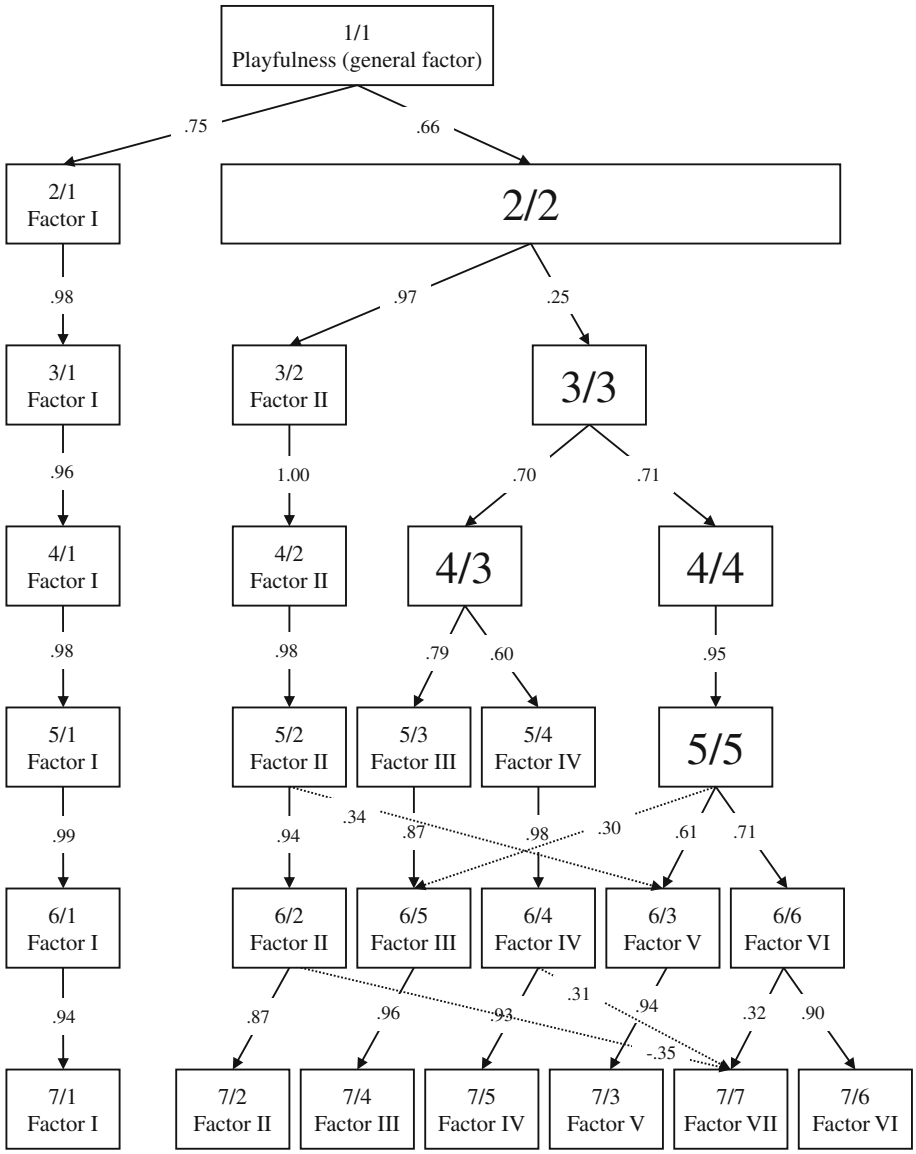

Fig. 1 The emergence of factors of adult playfulness (first unrotated principal component) starting from a general factor to a seven-factor solution rotated to the Varimax criterion; Factor I, *cheerful-engaged*; Factor II, *whimsical*; Factor III, *impulsive*; Factor IV, *intellectual-charming*; Factor V, *imaginative*; Factor VI, *lighthearted*; Factor VII, *kind-loving*; correlations to adjacent factors are only displayed when exceeding a coefficient $\geq .30$

irony, satire) or enjoying lascivious comments. Therefore, *Factor II* was labeled as "whimsical". The newly formed two factors of this level could not be labeled clearly at this point.

At the fifth hierarchy level, the factors three and four emerged and yielded high stability to the final step (both shared 36 and 62% of the variance with the third factor at the previous level). Factor three was somewhat special as it covered contents that were not necessarily positively connoted, such as being impulsive or demanding toward other people. This factor was labeled as "impulsive" (*Factor III*) as this characteristic described the contents best. *Factor IV* demonstrated high loadings with items that represented intellectual capacity but also charm in dealing with other people (e.g., in the way that people would enjoy ones company). Therefore, this factor was labeled "intellectual-charming."

The fifth factor was split into two factors at the next level with which it shared 37 and 50% of the variance, respectively. Items with high loadings on the fifth factor expressed pleasure in pursuing fantasy-related activities (e.g., daydreaming, fantasizing about projects or ideas) but also the liking of artful objects and art-related activities—and even more so easiness in feeling inspired. Hence, *factor V* was labeled as "imaginative." Those items that yielded high loadings on Factor VI indicated carelessness in daily business, an uncritical reflection of what happens in ones environment, and not spending too many thoughts on the serious aspects of live. The inspection of these contents showed that they could be best summarized under the term "lighthearted" (*Factor VI*). At the final level of the hierarchy, this factor was split into two different factors. With one, it was highly identical, while it shared about 10% of the variance with another factor. This factor

Table 2 Correlations between seven factors of playfulness (as derived from a German language corpus) and two current measures of adult playfulness

	Pearson correlations							Partial correlations (age, sex)						
	I	II	III	IV	V	VI	VII	I	II	III	IV	V	VI	VII
PSA	.44**	.55**	.02	.01	.02	.14*	.02	.51**	.53**	−.02	−.07	.05	.10	−.10
APS														
Total	.55**	.39**	.21**	.00	.26**	.39**	−.07	.57**	.40**	.16*	.01	.28**	.38**	−.11
Spontaneous	.39**	.43**	.10	.06	.21**	.45**	−.19**	.44**	.40**	.08	−.01	.25**	.44**	−.23**
Expressive	.47**	.19**	.40**	.12	.22**	.25**	.02	.44**	.25**	.35**	−.05	.23**	.24**	−.06
Fun	.71**	.23**	.05	.00	.05	.24**	.03	.71**	.28**	.01	.06	.06	.22**	−.02
Creative	.48**	−.01	.00	.10	.50**	.10	−.02	.46**	.06	.01	.17*	.52**	.11	−.01
Silly	.10	.56**	.19**	.01	.04	.44**	−.02	.16*	.52**	.16*	−.09	.05	.42**	−.05

$N = 198$–199 ($n = 187$, partial correlations); PSA, Playfulness Scale for Adults; APS, Adult Playfulness Scale; Factor I, *cheerful-engaged*; Factor II, *whimsical*; Factor III, *impulsive*; Factor IV, *intellectual-charming*; Factor V, *imaginative*; Factor VI, *lighthearted*; Factor VII, *kind-loving*

* $p < .05$; ** $p < .01$

consisted of items that mainly reflected contents indicating caring for others and experiencing deep feelings for others (e.g., in a romantic partnership). Therefore, factor VII was labeled "kind-loving." Factor II (whimsical; negative) and factor IV (imaginative; positive) also contributed to this factor.

Compared to the other factors, the correlation coefficients with the last factor (as displayed in Fig. 1) seemed to challenge its use. However, it was seen as an important contribution to the interpretation at the content level as it helped to further interpret and understand *lightheartedness* and its role in adult playfulness. The factor was, therefore, retained in the final solution.

Each of the factors comprised between five and twenty-one items (loadings ≥.30 on the respective factor or differences between factor loadings ≥.20). Thus, 66.1% of the items out of the corpus analysis could be assigned to one factor. Common characteristics of items that could not be clearly assigned to one factor were, for example, those relating to *physical activity* (double loadings on cheerful-energetic [positive] and kind-loving [negative]), being *vain* or *flamboyant* (impulsive and charming-intellectual), or being *chaotic* (cheerful-energetic, whimsical, and imaginative).

The Relations of the Seven Factors to Current Measures of Adult Playfulness

In order to test how these factors blend into what is measured in current questionnaires of playfulness, the seven-factor scores were correlated with Schaefer and Greenberg's *Playfulness Scale for Adults* (PSA; 1997) and a total score as well as the subscales of the Adult Playfulness Scale (Glynn and Webster 1992). The intercorrelation between the two playfulness scales was .59 ($p < .001$; total score for the APS). Correlation coefficients between the factors derived from the PIA and the playfulness scales are given in Table 2. These coefficients were also corrected for the impact of age and gender in an additional analysis in order to control for their potential impact on the results.

Table 2 shows that the two playfulness questionnaires dealt mainly with the cheerful-engaged, whimsical, and imaginative aspects of playfulness. Impulsiveness was only part of expressive playfulness in the APS, imaginativeness correlated robustly with the creative playfulness in the APS, and lightheartedness could be found in spontaneous and silly-variants of playfulness. Two factors that were derived from the corpus used in this study were not represented by the current measures; i.e., the intellectual-charming and kind-loving variants of playfulness. The latter was only slightly negatively related to spontaneous playfulness. Demographics did not contribute to the relations as controlling for age and gender had no impact on the results.[3]

Discussion

This study addressed the question of the dimensionality of playfulness in adults by an analysis of a corpus of written language. Using Goldberg's (2006) top-down approach, the hierarchical factor structure of playfulness was analyzed. A solution with seven factors emerged and could be well interpreted at the content level; i.e. (1) *cheerful-engaged*

[3] Additionally, a canonical correlation has been computed between the set of factors derived from the PIA and the scales of the APS and the total score of the PSA as the second set. Results are not reported here in detail but six significant ($p < .01$) canonical correlations emerged. The coefficients were .86, .71, .62, .52, .31, and .26, respectively. Together, they demonstrated 55% overlapping variance.

(being cheerful, open, and energetic); (2) *whimsical* (liking odd/grotesque types of humor or comments, being lascivious, and curios); (3) *impulsive* (being vivacious, demanding, and defiant); (4) *intellectual-charming* (being verbally fluent and sophisticated); (5) *imaginative* (endorsing fantasy, liking art, and being easily inspirable); (6) *lighthearted* (being careless, not ruminating, and not being strict or exact); and (7) *kind-loving* (benevolent, romantic, and tender). These contents describe the structure of playfulness on the basis of implicit linguistic and psychological theories.

Current measures of adult playfulness do not cover the full range of playfulness as it is reflected in the corpus used for this study. Other measures seem to primarily focus on cheerful-engaged, whimsical, and imaginative forms of playfulness. The question emerges on what has been left out? First of all, the *intellectual* component of playfulness is not represented in current instruments. At least in the written sources that entered the study, playfulness relates to intellectual interests as well as abilities. This is contradictory to the picture of childlike, nonserious behavior of playful adults, as often perceived stereotypically.

In Proyer (2011a), playfulness existed widely independently from self-rated and psychometric intelligence in tests for convergent thinking, whereas several studies delineate a robust relation between playfulness (in children) and divergent thinking (Barnett and Kleiber 1982; Lieberman 1965, 1967, 1977). However, Proyer (2011a) found that students higher in playfulness yielded better grades in a written examination and, thus, playfulness seems to relate to academic performance and extra engagement above what was needed for passing the examination. This could be traced back to different techniques used for the preparation for an examination or different ways of approaching the examination itself (e.g., more relaxed or less serious). Thus, there are also empirical hints that point to a relation of intellect and playfulness.

Abilities and characteristics of playful adults that may be related to *intellectual* (e.g., verbal fluency) but also *social competencies* are not reflected in the current measures; i.e., a charming way of dealing with other people (e.g., being fun to be around or being witty). It was somewhat surprising that such a positive aspect of playfulness as the aspect of being *loving* and romantic has not explicitly entered current measures of playfulness. An inspection of the emergence of the kind-loving factor helps describing its nature further. It is constituted from aspects of lightheartedness, intellectual-charming forms of playfulness, and (negatively) of contents from the whimsical factor. Thus, based on the written corpus, playful people can be described as warm and tender toward others.

It should also be acknowledged that there is good convergence of the present solution with earlier accounts such as the factors identified by Barnett (2007). Her gregarious factor seems to be the cheerful-engaged factor in this study—the kind-loving factor in this study also shares similarities with Barnett's gregarious factor; the uninhibited factor seems to be similar to the impulsive factor; the comedic factor relates to the whimsical factor in the present study. Although Barnett's dynamic factor was less clearly assigned, it seems to go along with the cheerful-engaged factor, at least partially. Also, the Schaefer and Greenberg (1997) dimensions (that reflect the fun variants of playfulness) were retrieved to some extent. However, their whimsical factor seems to have a different content than the one from this study as it also contains a preference for play in its narrow sense (e.g., having a basketball hoop in ones bedroom; PSA, Schaefer and Greenberg 1997). It is striking that the item that is closest to the present whimsical factor (i.e., not being "a serious, no-nonsense type of person") has the highest secondary loading in their sample (with the fun-loving factor).

Lieberman's (1977) conceptualization of playfulness as *manifest joy* (cheerful-engaged), *spontaneity* (impulsive, lighthearted), and *sense of humor* (cheerful-engaged; when seeing cheerfulness as one part of the temperamental basis of the sense of humor; cf. Ruch et al. 1996) could also be retrieved in the present study—though sense of humor was least well represented. Overall, it seems as if the present solution converged well with current conceptualizations of adult playfulness with contributions that go beyond these previous conceptualizations.

These results suggest (a) that adult playfulness can be well described on the basis of seven broader dimensions (factors) retrieved from written language; (b) that these seven factors contain positively but also negatively connoted aspects of playfulness; (c) that adult playfulness seems to be a multidimensional concept; (d) that the present solution can be well located in theoretical accounts; and (e) that current measures of playfulness do not seem to cover the full range of playfulness—at least when taking the everyday perception of people (as reflected in written productions) as a baseline.

A few words of caution need to be said about using the proposed dimensions from this study as a starting point for the development of a questionnaire or even using the items of the PIA itself as a questionnaire. As mentioned earlier, the employed approach covers the implicit linguistic and psychological theories on adult playfulness that are reflected in the corpus of the German language. While this cannot replace a more theory-driven approach, it may nevertheless support the development of a theory of adult playfulness. The development of a broad measure of adult playfulness may initiate future studies looking at developmental trends of playfulness in adult age. For example, one might argue that specific facets (e.g., intellectual-

charming, kind-loving) can be trained and cultivated with higher age as well as they could be more pronounced with higher age. Also, the idea of setting up and testing interventions for the rediscovery of a playful frame of mind in adulthood (McGhee 2010b) could be pursued from a multifacetted angle.

As a limitation of the current study, it needs to be acknowledged that these results cannot easily be generalized to other regions of the world in which German is not the national language—and, of course, the method used in this study is strongly language-based. It might well be that in other language regions other words would not only enter the corpus but might lead to a different list of items. This can be seen when considering that the darker side of playfulness has not yet been discussed widely within earlier studies that stem mainly from English-speaking countries. Thus, there may be a culture/language-specific bias in these findings. This, however, needs to be tested empirically.

Of course, there may be problems on the technical side of the study. For example, problems might occur when scanning a database of more than 15,000 entries. However, care was taken that several people worked independently from each other on this project combining findings only after each of the groups had its own solution. Nevertheless, it cannot be ruled out that a different working group might have come up with an alternative selection and phrasing of items. Also, the representativeness of the corpus used for this study can be discussed critically. The corpus was quite comprehensive but, of course, it did not contain all possible sources. An alternative way to replicate findings from this study would be to use an even larger corpus such as via internet search engines. This may enable the broadening of the contents from different contexts (e.g., youth language or further age-specific topics). Also, the proposed solution needs to be replicated with a new sample in order to provide information on its stability. Finally, the instruments used as representatives of current measures for adult playfulness have both advantages (e.g., a multifacetted view on playfulness) and limitations that support or limit their significance in research in this area (e.g., the theoretical foundation or methodological issues; cf., Barnett 2007; Krueger 1995).

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